Foundations of training periodization

Part Two: the objective of periodization

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Many experts believe that the variations of the climatic conditions (solar radiation, temperature of the air, atmospheric pressure etc.) when seasons change, influence the functionality of the organism (and this is unquestionable). But they come to the conclusion that the climatic factors determine the elaboration of the training plan, so much so that they consequently name the periods of training as winter period, summer period, etc.

But is the rotation of seasons the real cause of training periodization? If one affirms that the passage from one training period to another is connected to the climatic conditions, then we should, logically speaking, recognize that:

1) top performances are only possible in one precise season;
2) athletes living in different climates cannot appropriately prepare to the same competition;
3) the sporting events that can be practiced indoors the year-round don’t know any periodization, since in this case, the influence of climatic conditions disappears.

It is easy to verify that none of the above assertions is valid.

The relationship between training periodization and the competition calendar has been always debated, and during the dispute, two opposed viewpoints have emerged. The most widespread opinion is that the competition schedule is a determining factor of training periodization. The subdivision of training into periods should above all take care of the competition schedule. The supporters of the opposed point of view grant a great importance to this calendar, without however recognizing in it the fundamental reason of training periodization. It is not the competition calendar that determines training periods, but on the contrary, the calendar must be agreed in accordance with a periodization objectively necessary. However, it is important to confirm that the competition calendar arranges the dates for the competitions, saying nothing on the lapses of time necessary for a proper preparation for those competitions. It says nothing on the type of phases of training the athlete has to get over in order to attain his maximum form for the most important competitions.
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Even if the original theories of Leo Pavlovic Matvejev, the father of training periodization, are nowadays largely overcome, something can still be considered valid. I believe that one of the most important contributions of Matvejev's studies to modern periodization is that of considering periodization as a whole of objective laws that govern the training process.

From the viewpoint of the objective periodization, there is a clear difference between planning of training and the real periodization. In fact, we should keep in mind that the plan doesn't arrive to explain (and thus to fully exploit) the course of adaptations that happen because of a given training regimen. It would be relatively easy to achieve top performances if this required only the elaboration of a plan. To the plan, the actual training must follow. In addition, the plan doesn't lead to the appointed goals if the objective laws of the training process, particularly of its periodization, are not carried out. We shouldn't understand the relationship (however unquestionable) between planning and periodization in the fact that training periods are introduced as a necessary “convenience” for the plan of the program. Those periods emerge from objective laws that must be taken into consideration when establishing the training plan.

At this point, it is necessary to open a parenthesis. Many athletes and coaches think that periodization, with its stern formulation, doesn't take care of the normal physical and emotional fluctuations of the athlete, thus the so-called "instinctive" training is more suitable. To them, objective laws of periodization could seem to be a drastic, nearly soldierly training schedule and this could further confirm their inclination toward the instinctive type of training. But it's quite another thing. The more scientific knowledge on periodization progress, the less credit is given to instinctive training.

The independence of the athlete and coach is not a fictitious independence in the laws of nature, but rather in the knowledge of these laws and in the possibility, based on this knowledge, to let these natural laws act in a methodic way, according to the particular tasks. The freedom of the athlete and coach, i.e. the "breadth" in applying these laws, is nothing but their capacity to make decisions having the knowledge for doing it.

The objective laws of training periodization, and this could appear a contradiction, have an objective character, but also a subjective application. In fact, the double character of these fundamental laws of periodization shows itself either in the explanation of the mechanisms that induce the organic adaptations that lead to improved performances, or in the "individualization" of these processes, just according to the individual characteristics.

I remember my disappointment and that of my colleagues when asking some eminent east European coaches for precise information about the training program of their athletes, the answer inevitably was always the same: "It depends on the individual characteristics." [Editor's note: This same rhetoric was repeated a hundred times in our trip to the Soviet Union] For us, this was very discouraging. We even thought that our eastern colleagues intentionally desired to keep that information absolutely secret. (In part we still believe that this is true!)

But, at the same time, I remember our keen interest in knowing how deeply those coaches have investigated, in order to eviscerate the significant aspects of the individuality of the athlete, to be applied to training periodization. That's the real heart of the matter! We can take full advantage of periodization only when we know the objective laws of this process and when we really know the man who is in front of us. There are already many coaches interested in their athletes' life problems, in order to better know them as a person. But here I refer to something else. Here I'm concerned about how physical and psychological individual traits can differentiate a training model.

In the Soviet Union, coaches use simple but effective psychological tests. For example, they show the athlete a sheet of paper with a illustration similar to a crossword puzzle. Without saying what is the purpose of the test, the athlete is invited to attentively look at that picture. When he's ready, the picture is withdrawn. Now the athlete has the illustration with only white squares and he must reproduce the black squares in the exact position. There is no time limit. During the execution of the test, the coach notes how the athlete behaves (e.g. he thinks before trying; he tries with concentration; he asks explanations; he does immediately but not seriously; he gets angry because he cannot accomplish the task, etc.) and another evaluation is made according to the result of the test (positive or negative). Such a test gives us, as coaches, some precious information about the athlete's character. This is nothing new. What is new is that that information allows
us to choose what type of training, and consequently of periodization, is best suited for each single athlete. However, the tendency shown by the test must be confirmed by training itself. Very schematically, the Soviet approach distinguishes four basic types of temper and, consequently, of training procedures. They distinguish these as “choleric,” “sanguineous,” “phlegmatic” and “melancholic” according to the activity of the nervous system.

Furthermore, the individual capacity to learn must be taken into consideration. Here three types of athletes are distinguished: the athlete who learns quickly, the athlete who learns slowly and he who learns quickly but quickly forgets. This individual characteristic must necessarily be considered while planning the training program, and thus it influences periodization.

Another aspect concerns the individual ability to assimilate the training loads and the corresponding course of the different types of adaptations (Figure 1).

The organization of training is closely related to the type of individual reaction of athletes to the training loads. Speaking of power events, Bondarchuk has identified six types that respectively react in 2, 3, 4, 5, 6 and 7 months with an optimal improvement of performances. This means a development cycle of 2 to 7 months. One month of stabilization follows and then another month in which performances will diminish. (Figure 2)

Each development phase (called “functional cycle”) ends with a phase of relative stabilization of performance, that is with a stable adaptation to the training methods and means that, until that moment, haven't been changed. The variation in the content of the training loads (up to 50 percent) is used for handling the duration of the period of stabilization. By varying the exercise, the stabilization phase can be prolonged up to one month. This is very important for the control of the form until an important competition. So, each type of individual reaction to the training loads has various possibilities of periodization (Figure 3). This way, training is individualized also in its structure!

Figure 1. Course of the reaction to training loads, according to the individual characteristics—after Bondarchuk.

Figure 2 (after Bondarchuk)

Figure 3. R=recovery cycle  D=development cycle  S=stabilization cycle examples for a reaction lasting 3 months (after Bondarchuk)